

Rhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 7

May, 1905

No. 77

THE NORTH AMERICAN SPECIES OF ERIOPHORUM.

M. L. FERNALD.

PART I. SYNOPSIS OF AMERICAN SPECIES.

THE genus *Eriophorum*, familiarly known as Cotton Grass, is generally distributed in the boreal regions of the northern hemisphere; and on account of its conspicuous perianth the genus is perhaps more quickly recognized by the general student than other members of the *Cyperaceae*. In spite of this comparative ease of recognition, or perhaps because of it, the genus, as understood in America, has come to be one with ill-defined botanical limits, and not sharply separated from some sections of the genus *Scirpus*; while its species as ordinarily interpreted in American floras are in an unfortunate state of confusion. A prolonged study of the material in the Gray Herbarium and the herbarium of the New England Botanical Club, supplemented by the very extensive collections of the Geological Survey of Canada, generously loaned by Mr. J. M. Macoun, and the material in several private herbaria, has led the writer to prepare the following synopsis of the American species. This synoptic treatment will be followed by a detailed discussion of the history and some of the affinities of the genus *Eriophorum*, with notes on certain species which have been misinterpreted in past treatments of the group. In the bibliography of this work the writer has been greatly assisted by Miss Mary A. Day.

SYNOPSIS OF SPECIES.

§ **VAGINATA**, Andersson, Cyp. Scand. 13 (1849). Spikelet solitary, without involucral leaves; the lowermost scale usually en-

larged and more veiny than the others: culms usually bearing loose bladeless sheaths, or with only reduced blades.

* Stoloniferous: culms mostly solitary: empty scales at the base of the spikelet few (usually 7 or less).

+ Anthers 1 mm. long: flowering spikelet obovoid; in fruit becoming globose, as broad as high: scales with very narrow pale margin.

E. SCHEUCHZERI, Hoppe. Culms soft, 0.5–3.5 dm. high: caudex loosely stoloniferous: leaves channeled or strongly involute, much shorter than the culms; those of the sterile shoots soft, 3–12 cm. long: culms at base slightly leafy, above usually bearing a bladeless loose membranous-edged black-tipped sheath (2–7 cm. long): flowering spikelet broadly obovoid or subglobose, 8–12 mm. long: scales lead-color or blackish, with slightly paler margins; the 1 to 3 outer ones ovate; the others ovate-lanceolate to lance-attenuate: fruiting spikelet depressed-globose, 2–2.5 cm. high: the bristles bright white: achenes narrowly obovoid, plano-convex or slightly 4-angled, 1.7–2.5 mm. long, 0.7–1 mm. broad, with a short slender beak.—Bot. Taschenb. (1800) 104, App. t. 7; Reichenb., Ic. Fl. Germ. viii. 35, t. 289, fig. 685 (1846); Ledeb., Fl. Ross. iv. 253 (1853); Bcklr., Linnaea, xxxvii. 92 (1871) & Cyp. Königl. Herb. Berlin, 628; Lange, Consp. Fl. Groenl. 129 (1880); Nyman, Consp. 762 (1882); Richter, Pl. Eur. i. 136 (1890); Norman, Christiania Vidensk.–Selsk. Forhandl. (1893) no. 16, 45; Clarke in Hook., Fl. Brit. Ind. vi. 664 (1893); Palla, Bot. Zeit. liv. ab. 1, 151 (1896); Britton & Brown, Ill. Fl. i. 272 (1896), in part; Ostenfeld, Fl. Arct. 41 (1902). *E. capitatum*, Host, Gram. i. 30, t. 38 (1801); Engl. Bot. xxxiv. t. 2387 (1812); Hornem., Fl. Dan. ix. t. 1502 (1818); Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 336 (1836), except as to syn. *E. callithrix*; Hook., Fl. Bor.-Am. ii. 231 (1839), as to Labrador and Arctic plant; Anders., Cyp. Scand. 13, t. 2, fig. 31 (1849) and Bot. Not. (1857) 78; Macoun, Cat. Can. Pl. ii. 104 (1888) as to Labrador and Arctic plant at least. *E. leucocephalum*, Bcklr., Flora, xli. 419 (1858). Arctic America, extending south on the Labrador coast to Square Island (latitude $52^{\circ} 44'$), in the Rocky Mts. to the head of Lake Louise, Alberta (lat. 51°) and Revelstoke, British Columbia, and on the Alaska coast to Sitka (latitude 57°). Arctic Europe and Asia.

+ + Anthers 1.5–3 mm. long, slightly shorter than the filaments: flowering spikelet cylindric; in fruit becoming obovoid, distinctly longer than broad: scales with broad, pale margin.

E. Chamissonis, C. A. Meyer. Loosely stoloniferous: sterile shoots bearing slender channeled leaves 1–6.5 dm. long: culms slender, terete, 1–8 dm. high: the lowest reddish brown sheaths blade-bearing; the uppermost scarcely inflated and mostly bladeless (3.5–10 cm. long): flowering spikelet oblong-cylindric, 1.5–2 cm. long: scales brownish-lead-color to blackish, with distinct whitish margin, ovate to ovate-lanceolate, bluntish: fruiting spikelet 2.5–4 cm. long: bristles reddish or cinnamon color: achenes trigonous.—C. A. Meyer in Ledebour, Fl. Alt. i. 70 (1829), as to description for the most part, synonymy, and citation of the Unalaskan specimen but not the Altai plant, and Mém. Sav. Étrang. Acad. St. Pétersb. i. 204, t. 3 (1831), except the Altai plant; Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 337 (1836), mostly; Fries, Novit. Mant. ii. 1 (1839); Ledeb., Fl. Ross. iv. 253 (1853), mostly; Bcklr., Linnaea, xxxvii. 93 (1871), and Cyp. Königl. Herb. Berlin, 629; Richter, Pl. Eur. i. 136 (1890). *E. intermedium*, Chamisso, ex C. A. Meyer, ll. cc., (1829, 1831), as synonym, not Bast. *E. vaginatum*, β . *medium*, Laestad., ex Fries, l. c. (1839), as synonym. *E. fulvellum*, LaPylaie, ex Fries, l. c., 2 (1839), as synonym. *E. russeolum*, Fries, l. c., 2 (1839), as synonym, and l. c. iii. 170 (1842); Anders., Cyp. Scand. 13, t. 2, fig. 32 (1849), and Bot. Not. (1857) 80; Blytt, Norges Fl. 271 (1861); Liebm. & Lange, Fl. Dan. Suppl. t. 8 (1874); Nyman, Consp. 762 (1882); Macoun, Cat. Can. Pl. ii. 104 (1888); Norman, Christiania Vidensk.-Selsk. Forhandl. (1893) no. 16, 45; Palla, Bot. Zeit. liv. ab. 1, 151 (1896); Britton & Brown, Ill. Fl. i. 272 (1896); Ostenfeld, Fl. Arct. 42 (1902). *E. vaginatum* γ , Hook., Fl. Bor.-Am. ii. 231 (1839), fide Fries, Novit. Mant. iii. 170. *E. capitatum*, Hook., Fl. Bor.-Am. ii. 231 (1839), as to synonym *E. Chamissoi*, not Host; Macoun, Cat. Can. Pl. ii. 104 (1888) as to Moose Factory plant. *E. Chamissoi*, Hook., Fl. Bor.-Am. ii. 231 (1839), in synonymy. *E. Scheuchzeri*, var. *Chamissonis*, F. Nylander, Acta Soc. Sc. Fenn. iii. (1852), and in Anders., Bot. Not. (1857) 58. *E. medium*, Anders. Bot. Not. (1857) 62. *E. rufescens*, Anders., Bot. Not. (1857) 79. *E. vaginatum*, b., Bcklr., Linnaea, xxxvii. 94 (1871), and Cyp. Königl. Herb. Berlin, 630. *E. russeolum*, var. *rufescens*, Hartm., Handb. ed. 11, 450 (1879).—Labrador and Alaska, locally south to Newfoundland, Saint Pierre, Miquelon, Quebec (ascending to the summit of Mt. Albert), Prince Edward Island, New Brunswick and Northern Nova Scotia; James Bay, and Mer Bleue,

Ontario; Lake Huron (fide Hook., Fl. Bor. Am.); Yellowstone National Park, Montana, Idaho, Washington and Vancouver. Arctic and subarctic Europe and Asia. Flowering June and July; fruiting July and August (mature in eastern New Brunswick, July 16, on Mt. Albert, Quebec, August 27).

Var. *albidum*, n. comb. Bristles white.—*E. russeolum*, var. *albidum*, F. Nylander, Acta Soc. Sc. Fenn. iii. (1852), & in Anders., Bot. Not. (1857) 58. *E. russeolum*, var. *candidum*, Norman, Ind. Supp. 46 (1864); Hartm., Handb. ed. 11, 450 (1879).—Same range as the species but less common, except perhaps about Behring Sea.

* * Caespitose, not stoloniferous: empty scales at the base of the spikelet numerous (usually 10-15).

+ Flowering spikelet oblong, 1-3 cm. long: anthers 2-3 mm. long: fruiting spikelet subglobose or broadly obovoid, as high as broad.

E. VAGINATUM, L. Densely caespitose, forming broad tussocks with very numerous stiff obtusely trigonous culms (1.5-7 dm. high): basal sheaths brown, long-persistent, fibrillose; basal leaves slender, trigonous, smooth or scabrous; caudine sheaths 2, conspicuously inflated above, veiny-reticulate, with dark (usually black) membranous tip: scales obovate to ovate-lanceolate, long-acuminate, lead-color or blackish, with whitish or pale margins: bristles glossy white.—Sp. 52 (1753); Engl. Bot. xiii. t. 873 (1801), ed Syme, x. 71, t. 1604 (1873); Baxter, Brit. Bot. vi. t. 427 (1843); Reich., Ic. Fl. Germ. viii. t. 289, fig. 686 (1846); Palla, Bot. Zeit. liv. ab. 1, 148, 151 (1896); Ostenfeld, Fl. Arct. 40 (1902); &c. *E. caespitosum*, Host, Gram. i. 30, t. 39 (1801).—YUKON DISTRICT, White Horse Rapids, Yukon River, Sept. 1, 1902 (*J. Macoun*, Herb. Geol. Surv. Can. no. 53,839): MACKENZIE DISTRICT, Artillery Lake, May 29, 1900 (*J. W. Tyrrell*, Herb. Geol. Surv. Can., no. 23,138). Northern Europe and Asia, and western Greenland.

The Tyrrell material from Artillery Lake is very fragmentary; but the oblong flowering spikelets, long anthers and very inflated sheaths are quite like those of the Old World *E. vaginatum*. The Macoun plant from the Yukon has the leaves harshly scabrous, a character unusual in the European plant, but noticeable in some Scandinavian specimens. Most other American material which has passed as *E. vaginatum* belongs to the two following species.

+ + Flowering spikelet obovoid or subglobose, 0.8–1.5 cm. long: anthers 1–2 mm. long: fruiting spikelet depressed-globose, broader than high.

++ Upper sheaths distinctly inflated: culm trigonous and (under the lens) scabrous at tip: pits of the receptacle with obtusely angled lower walls.

E. CALLITRIX, Chamisso. Similar to *E. vaginatum*: but with leaves generally scabrous in lines; the 1 or 2 upper sheaths less inflated: the flowering spikelet shorter and broader: the anthers shorter: the fruiting spikelet depressed-globose, 2.5–5 cm. broad.—Chamisso in C. A. Meyer, Mém. Sav. Étrang. Acad. St. Pétersb. i. 203, t. 2 (1831); Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 337, (1836), in note; Ledeb., Fl. Ross. iv. 254 (1853), not Andersson and other European Authors. *E. caespitosum*, Pursh, Fl. i. 57 (1814); Eaton, Man. ed. 4, 294 (1824); not Host. *E. vaginatum*, Torr., Fl. 65 (1824), Ann. Lyc. Nat. Hist. N. Y. iii. 335 (1836), and Fl. N. Y. ii. 358, t. 141 (1843); Beck, Bot. 427 (1833); Hook., Fl. Bor.-Am. ii. 231 (1839), in part; Gray, Man. 529 (1848); Macoun, Cat. Can. Pl. ii. 103 (1888), in part; Britton & Brown, Ill. Fl. i. 272 (1896); not L. *E. Chamissonis*, C. A. Meyer in Ledeb., Fl. Alt. i. 70 (1829) and Mém. Sav. Étrang. Acad. St. Pétersb. i. 204 (1831), as to Altai plant, but not description and plate, &c. *E. capitatum*, β, Hook., Fl. Bor. Am. ii. 231 (1839). *E. virginatum*, Eaton & Wright, N. A. Bot. 237 (1840). *E. vaginatum*, var. *humile*, F. Nylander, Acta Soc. Sc. Fenn. iii (1852), and in Andersson, Bot. Not. (1857) 58. *E. brachyantherum*, Trautv. & Meyer in Middend., Reise,—Fl. Ochot. 98 (1856); Palla, Bot. Zeit. liv. ab 1, 148, 151 (1896).—Baffin Land and Ungava across North America to Behring Sea, and in northeastern Asia to the Altai; south in America to Pennsylvania, Michigan, Wisconsin, and Manitoba. Flowering, arctic and alpine regions, June, July; southern New England and Pennsylvania, early May: fruiting, arctic regions, July, August; southern New England, &c., late May and early June.

Var. *erubescens*. Bristles reddish brown.—NEWFOUNDLAND, sphagnum soil on rocky hill, Channel, July 27–August 1, 1901 (*Howe & Lang*, no. 899).

++ ++ Upper sheaths close or scarcely inflated: culm terete, glabrous at tip: pits of the receptacle with rounded lower walls.

E. opacum, n. comb. Loosely caespitose, forming small tufts with few very slender terete glabrous culms (3–6 dm. high): basal leaves nearly filiform, glabrous; caudine sheaths often with short

blades, the remote uppermost barely inflated toward the dark-edged tip: flowering spikelet globose-obovoid, barely 1 cm. long; fruiting spikelet globose, 2-3.5 cm. broad: scales lead-color, the outer ovate-lanceolate, the inner lance-attenuate: bristles sordid-white.—*E. vaginatum*, var. *opacum*, Björnstr., Grunndr. af Piteå Lappm. Växtfys. 35 (1856); Fries, Bot. Not. (1857) 11. *E. callitrix*, Anders. Bot. Not. (1857) 60; Fries, Bot. Not. (1858) 63; Blytt, Norges Fl. 270 (1861); Liebm. & Lange [*callithrix*], Fl. Dan. Suppl. t. 122 (1874); Hartm., Skand. Fl. ed. 11, 450 (1879); Palla, Bot. Zeit. liv, ab. 1, 148, 151 (1896); Ostenfeld, Fl. Arct. 41 (1902); not Chamisso. *E. vaginatum*, Macoun, Cat. Can. Pl. ii. 103 (1888), in part. Examined from the following American stations. ONTARIO, peat bogs, Hastings County, July 21, 1873 (*J. Macoun*): SASKATCHEWAN, muskeag north of Prince Albert, July 3, 1896 (*J. Macoun*, Herb. Geol. Surv. Can., no. 16,384): ATHABASCA, bogs, Clearwater River, July 11, 1888 (*J. M. Macoun*, Herb. Geol. Surv. Can., no. 32,297): ALBERTA, boggy places, Canmore, June 30, 1885 (*J. Macoun*, Herb. Geol. Surv. Can., no. 32,293); Banff, July 4, 1891 (*J. Macoun*, Herb. Geol. Surv. Can., no. 7,574); outlet of Lake Louise, August 14, 1897 (*E. Brainerd*): YUKON, marsh, 1500 feet above Hunker Creek, July 27, and Independence Creek, Aug. 1, 1902 (*J. Macoun*, Herb. Geol. Surv. Can., nos. 53,840 and 53,943): BRITISH COLUMBIA, east of Stewart's Lake, June 19, 1875 (*J. Macoun*, Herb. Geol. Surv. Can., no. 32,292); headwaters of Fraser River, July 21, 1898 (*W. Spreadborough*, Herb. Geol. Surv. Can., no. 20,779). Very local in Arctic Europe and Asia.

§ § **PHYLLANTHELA**, Andersson, Cyp. Scand. 12 (1849). Spikelets several (rarely 1), subtended by 1 or more foliaceous bracts.

* Leaves slender, triangular-channelled throughout: involucre a single upright slender colored bract much shorter than the inflorescence.

+ Upper caudine leaf with the sheath longer than the blade.

E. GRACILE, Koch. Weak and very slender, the subterete glabrous culms 2-6 dm. high, with no young basal leaves developed at flowering season: sheath of the upper caudine leaf 3.5-5.5 cm. long, the round-tipped smooth blade 1-4 cm. long, 1-1.5 mm. broad: involucral bract similar, usually dark at base, 1-2 cm. long: spikelets 2 to 5, the central one subsessile, the others on slender unequal minutely hairy spreading ascending or finally nodding peduncles (0.5-3 cm.

long), in anthesis narrow-ovoid, 7–10 mm. long, in fruit 1.5–2 cm. long: scales lead-color or blackish, ovate to short-oblong, 2.5–4 mm. long, all but the outermost blunt or rounded-tipped: anthers linear, 1–2 mm. long: achenes linear-oblanceolate, blunt, compressed, trigonous, 1.5–2 mm. long: bristles white.—Koch in Roth., Cat. ii. 259 (1800); Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 341 (1836); Reich., Ic. Fl. Germ. viii. t. 290 (1846); Gray, Man. 529 (1848), in part; Engl. Bot. Suppl. iv. t. 2886 (1849) and ed. Syme, x. 74, t. 1607 (1873); Ett. & Pok., Phys. Pl. Austr. vi. t. 533 (1873); Watson, Bot. Cal. ii. 220 (1880), in part; Palla, Bot. Zeit. liv. ab. 1, 148, 151 (1896); Britton & Brown, Ill. Fl. i. 273 (1896); in part; A. A. Eaton, Bull. Torr. Club, xxv. 340 (1898); Britton, Man. 182 (1901). *Linagrostis paniculata*, β , Lam., Fl. Fr. iii. 555 (1778). *Eriophorum triquetrum*, Hoppe, Taschenb. (1800) 106. *E. polystachyon*, var. *tenellum*, Gray, Gram. & Cyp. pt. 1, no. 91 (1834), in part. *E. angustifolium*, Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 339 (1836), in part, not Roth. *E. angustifolium*, β ? *brevifolium*, Torr., l. c. 340 (1836), in part.—Cold swamps and bogs, Gulf of St. Lawrence to Hudson Bay and British Columbia, south to Connecticut, Pennsylvania, Michigan, Nebraska, and California. Northern Europe and Asia. Flowering, April, May; fruiting May–July.

Var. caurianum. Involucre and scales straw-color or brownish: achenes 2.5–3 mm. long.—OREGON, subalpine regions, 1886 (*W. C. Cusick*, no. 1450): CALIFORNIA, Sierra County, 1874 (*J. G. Lemmon*); south side of Mt. Shasta, alt. 5000–10,000 feet, July, 1897 (*H. E. Brown*, no. 628). A somewhat coarser plant than true *E. gracile*, but with the characteristic short blunt upper leaf.

+ + Upper caudine leaf with the sheath shorter than the blade.

E. TENELLUM, Nutt. Culms stiff, obtusely trigonous, scabrous above, 3–9 dm. high, with long slender green sharp-pointed often scabrous basal leaves: sheath of the upper caudine leaf 2.5–8 cm. long; the scabrous sharp-pointed blade 3–18 cm. long: involucral bract straw-color to reddish-brown at base, 1.5–6 cm. long: spikelets 3 to 6, mostly on unequal scabrous peduncles (0.5–3.5 cm. long), in fruit 2–2.8 cm. long: scales greenish straw-color to reddish brown, 2.5–5 mm. long: achenes linear-oblong, 2.5–3 mm. long, short-beaked: bristles whitish.—Gen., Additions (1818); Palla, Bot. Zeit. liv. ab. 1, 148, 151 (1896). *E. polystachyon*, var. *tenellum*, Gray, Gram. &

Cyp. pt. 1, no. 91 (1834), in part. *E. angustifolium*, Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 339 (1836), in part, not Roth. *E. angustifolium*, β ?*brevifolium*, Torr. l. c. 340 (1836), in part. *E. gracile*, β . *paucinervium*, Engelm., Am. Jour. Sci. xlvi. 103 (1844); Gray, Man. ed. 2, 502 (1856). *E. gracile*, Gray, Man. 529 (1848); Britton & Brown, Ill. Fl. i. 273 (1896), in part, including fig. 642. *E. paucinervium*, A. A. Eaton, Bull. Torr. Cl. xxv. 341 (1898); Britton, Man. 182 (1901). — Swamps and bogs, Newfoundland to Ontario, south to New Jersey and Illinois. Fruiting July and August.

* * Leaves flat, at least below the middle: involucre (except in dwarf variety of *E. polystachion*) of 2 or more bracts.

← Scales of the spikelet with only 1 prominent rib: stamens 3.

++ Midrib of the scale prominent only below the membranous tip: leaves triangular-channelled above the middle; the upper sheaths dark-girdled at summit.

E. POLYSTACHION, L. Culms 2–6 dm. high, slender, obtusely angled: basal leaves several, elongate, usually conduplicate, especially above the middle; caudine leaves few, remote, stiff, flat only toward the base, 1.5–15 cm. long, 1.5–4 mm. broad, the margins scabrous: involucral bracts 2 or 3, dark-colored at least at base, the longest 2–9 cm. long: spikelets 2 to 10, the central subsessile, the others on divergent or drooping stout mostly glabrous peduncles (0.5–7 cm. long), in anthesis ovoid, 1–2 cm. long, in fruit 2.5–4.5 cm. long: scales lead-color to castaneous, ovate to lanceolate, acutish, 4–10 mm. long, the slender midrib disappearing below the pale membranous tip: anthers linear, 2.5–5 mm. long: achenes oblong-obovoid, compressed-trigonous, 2.7–3.5 mm. long: bristles bright white. — Sp. 52 (1753); Schk., Handb. i. 28, t. 8 (1791); Curt., Fl. Lond. iv. t. 9 (1821); Hook. [*polystachyon*], Fl. Bor.-Am. ii. 231 (1839); Reich. [*polystachyum*], Ic. Fl. Germ. viii. 35, t. 291 (1846); Britton & Brown [*polystachyon*], Ill. Fl. i. 273 (1896), in part; Britton, Man. 182 (1901), in part. *Linagrostis polystachia*, Scop., Fl. Carn. ed. 2, i. 48 (1772). *Eriophorum angustifolium*, Roth., Tent. i. 24 (1788), ii. 63 (1789), and Neue Beitr. 94 (1802); Engl. Bot. viii. t. 564 (1799); Hornem., Fl. Dan. ix. t. 1442 (1818); Beck, Bot. 427 (1833); Koch, Syn. 745 (1837); Hook., Fl. Bor.-Am. ii. 231 (1839), in part; Thomé, Fl. Deutschl. i. t. 102 B, C. (1886); Palla, Bot. Zeit. liv. ab. 1, 148, 151 (1896). *E. angustifolium*, β . *laxum*, Mert. & Koch, Deutschl. Fl. i. 456 (1823). ?*E. strictum*, R. Br. in Richards., App. Franklin Jour.

731—reprint 3 (1823); Torr., Ann. Lyc. Nat. Hist. N. Y. iii. 341 (1836); Hook., l. c. 232. *E. angustifolium*, var. *vulgare*, Koch, Syn. ed. 2, 860 (1844). *E. polystachyon*, var. *angustifolium*, Gray, Man. 529 (1848). *E. angustifolium*, var. *genuinum*, Engl. Bot. ed. Syme, x. 73, t. 1605 (1873).—Arctic America, south to Newfoundland, Nova Scotia, New Brunswick, Quebec, Lake Superior, and British Columbia. Europe and Asia. Fruiting, southern Canada, June, July; arctic regions, July and August.

Var. *ELATIUS*, Bab. Stout and tall (3–9 dm.): caudine leaves 4–8 mm. broad.—Man. 333 (1843). *E. polystachion*, Engl. Bot. viii. t. 563 (1799); Host, Gram. i. 29, t. 37 (1801); Coult., Man. 368 (1885). *E. angustifolium*, β . *majus*, Schultz, Fl. Starg. Suppl. 5 (1819). *E. angustifolium*, var. *elatus*, Mert. & Koch, Deutchl. Fl. i. 456 (1823); Koch, Syn. ed. 2, 860 (1844). Engl. Bot. ed. Syme, x. 73 (1873). *E. ocreatum*, A. Nelson. Bull. Torr. Cl. xxix. 400 (1902). *E. polystachyon*, var. *majus*, Aschers. & Graebn., Syn. ii. ab. 2, 334 (1903).—Subarctic America, south to central Maine, Ontario, Illinois, Wisconsin, Iowa, and the mountains of Colorado and Oregon. Europe and Asia.

Var. *ELEGANS*, Bab. Slender, 0.5–2.5 dm. high: spikelets 1 to 3, sessile or subsessile: longest bract of the dark involucle 0.5–1.5 cm. long.—Man. 333 (1843). *E. gracile*, Sm., Engl. Bot. xxxiv. t. 2402 (1812) and Engl. Fl. i. 69 (1824), not Koch. *E. angustifolium*, var. *alpinum*, Gaud., Fl. Helvet. i. 131 (1828). *E. angustifolium*, var. *minus*, Koch, Syn. 746 (1837); Engl. Bot. ed. Syme, x. 73, t. 1606 (1873). *E. pseudo-triquetrum*, Schur, Eu. 695 (1866). *E. minus*, Dalla-Torre, Atl. Alpenfl. 216 (1882). *E. polystachion*, var. *minus*, Richter, Pl. Eu. i. 136 (1890). *E. polystachyon*, var. *alpinum*, Aschers. & Graebn., Syn. ii. ab. 2, 334 (1903).—An extreme dwarf form of arctic and high-alpine regions. GRINNELL LAND (*A. W. Greely*): LABRADOR, Cape Chudleigh (*R. Bell*): ALASKA, St. Michaels (*L. M. Turner*). Arctic and alpine Europe.

++ ++ Midrib of the scale prominent, extending to the tip: leaves flat, except at the very tip; the sheaths and bracts not dark-girdled.

E. viridi-carinatum, n. comb. Culms slender, trigonous, smooth, 2–9 dm. high: basal leaves numerous, elongate; caudine few, remote, green throughout, thin, scabrous on the margins, the uppermost 5–15 cm. long, 2–6 mm. wide: involucral bracts 2

to 4, green throughout or brownish at base, the longest 3–9 cm. long: spikelets 3 to 30, on slender simple or forked minutely hairy peduncles (1–6 cm. long), in anthesis oblong-ovoid, 6–10 mm. long, in fruit 1.5–3 cm. long: scales greenish drab to lead color, ovate to lanceolate, 4–6 mm. long, the prominent often scabrous midrib extending quite to the tip, in the outermost sometimes prolonged as a short scabrous mucro; anthers linear-oblong, 1–1.25 mm. long: achenes oblong-obvoid, trigonous, 2.5–3.5 mm. long: bristles white or pale buff. — *E. polystachium*, Pursh, Fl. 58 (1814); Eaton, Man. 11 (1817); Torr. [*polystachyon*], Fl. 66 (1824); Beck, Bot. 427 (1833); Eaton & Wright, Bot. 237 (1840); Torr. [*polystachyum*], Fl. N. Y. ii. 359 (1843); Britton & Brown (*polystachyon*), Ill. Fl. i. 273 (1896), in part, incl. fig. 641; Small, Fl. 175 (1903). *E. latifolium*, β . *viridi-carinatum*, Engelm., Am., Jour. Sci. xlvi. 103 (1844). *E. polystachyon*, var. *latifolium*, Gray, Man. 529 (1848), not *E. latifolium*, Hoppe.—Bogs and wet meadows, Newfoundland to Saskatchewan and British Columbia, south to Connecticut, New York, Ohio, Michigan, Wisconsin, and said to follow the mountains to Georgia. Fruiting, southern New England, May and June; Gulf of St. Lawrence, July, August. Of the 70 sheets of specimens examined the following may be cited as typical. NEWFOUNDLAND, sphagnous swamps, near Topsail, Conception Bay, August, 1901 (*Howe & Lang*, nos. 1287, 1292): QUEBEC, peat-bogs, Salt Lake, Anticosti, August 10, 1883 (*J. Macoun*, Herb. Geol. Surv. Can., no. 32,273); Forteau, lat. 51° , July 31, 1882 (*J. A. Allen*, no. 13); arbor-vitae swamps, Carleton, July 24 & 27, 1904 (*Collins, Fernald & Pease*): NEW BRUNSWICK, Campellton, July 1, 1876 (*R. Chalmers*, Herb. Geol. Surv. Can. no. 32,271): NOVA SCOTIA, peat-bogs, Sydney Mines, July 14, 1883, bogs, Yarmouth, June 23, 1883 (*J. Macoun*, Herb. Geol. Surv. Can., nos. 32,281, 32,261): ONTARIO, near Sarnia, June 5, 1892 (*C. K. Dodge*); bog, Casselman, June 12, 1892, and swamps, near Tetreauville, June 1, 1903 (*J. Macoun*, Herb. Geol. Surv. Can., nos. 32,267, 61,192): MANITOBA, tamarack swamp, near Sewell, June 12, 1896 (*J. Macoun*, Herb. Geol. Surv. Can., no. 16,389): SASKATCHEWAN, muskeag, Prince Albert, July 1, 1896 (*J. Macoun*, Herb. Geol. Surv. Can., no. 16,391): ALBERTA, bogs, Elbow River, July 12, 1897 (*J. Macoun*, Herb. Geol. Surv. Can., no. 25,329): BRITISH COLUMBIA, Kicking Horse Lakes, July 23, 1885 (*J. Macoun*, Herb. Geol. Surv. Can., no.

32,285) : MAINE, larch swamps, St. Francis River, Aug. 13, 1902 ; swale, St. Francis, June 18, 1898 — no. 2085 ; marl, Fort Fairfield, June 22, 1898 — no. 2084 ; cedar swamp, Blaine, June 23, 1898 — no. 2083 ; wet meadows, Island Falls, June 10, 1898 — no. 2082 ; low woods and thickets, Dover, June 24, 1895 — no. 224 (all *M. L. Fernald*) : NEW HAMPSHIRE, Flume, Franconia, June 29, 1855 (*Wm. Boott*) ; wet meadow, Crawford, July 1, 1898 (*E. F. Williams*) : VERMONT, Manchester, July 5, 1898 (*M. A. Day*, no. 289) : MASSACHUSETTS, Ashburnham, June 22, 1896 (*S. Harris*) ; vicinity of Boston, 1892 (*Biltmore Herb.*, no. 373a) ; open wet ground, Buckland, May 30, 1902 (*F. F. Forbes*) ; swale, Williamstown, May 31, 1898 (*J. R. Churchill*) : RHODE ISLAND, North Providence, May, 1846 (*G. Thurber*) ; Morris Swamp, Providence, May 24, 1891 (*J. F. Collins*) : CONNECTICUT, swamps, Southington, June 30, 1897 (*C. H. Bissell*, no. 708) ; Kent, June 3, 1894 (*C. K. Averill*) : NEW YORK, western part of state (*A. Gray*, Gram & Cyp., no. 90) ; marsh near Utica, June 4, 1901 (*J. V. Haberer*, no. 1162) : OHIO (*Sullivant*) : MICHIGAN, swale, Keweenaw Co., August, 1888 (*O. A. Farwell*, no. 691) ; Port Huron (*C. K. Dodge*) : WISCONSIN, Elkhart Lake, Green Bay, June, 1879 (*J. H. Schuette*).

Very unlike the European *Eriophorum latifolium*, Hoppe, which has the thin membranous dark scales with nerveless tips, and the bases of the involucre and the summits of the upper sheaths dark-girdled as in *E. polystachion*.

Var. **Fellowsii**. Spikelets all sessile or subsessile in a dense glomerule.—*E. polystachion*, var. *Vaillantii*, Fernald, Rhodora, iv. 82 (1902) ; Hoffmann, Rhodora, vi. 203 ; not Duby.—MAINE, Peaks Island, Portland Harbor, June 16, 1901 (*D. W. Fellows*) : MASSACHUSETTS, Sheffield, June 1, 1902 (*M. L. Fernald*).

+ + Scales of the spikelets with several prominent ribs : stamen 1.

E. VIRGINICUM, L. Culms slender, wiry, terete below, trigonous above, smooth, 4-12 dm. high : leaves with close sheaths, elongate-linear, firm, scabrous on the margins, flat except at tip, the uppermost 1-2.5 dm. long, 1.5-4 mm. wide : involucral bracts 2 to 5, very unequal, somewhat divergent, the longest 4-12 cm. long : spikelets few to many, mostly crowded in a dense glomerule (1.5-6 cm. thick), in anthesis elliptic-ovoid, 6-10 mm. long, in fruit 1-2 cm. long : scales ovate-oblong, blunt or acutish, 3-5 mm. long, the strongly

striate-ribbed body greenish to straw-color, the thinner nerveless margin red-brown: anthers linear, 1.5 mm. long: achenes narrowly oblong, trigonous, attenuate below, abruptly short-beaked above, 3-4 mm. long: bristles tawny to copper color.—Sp. 52 (1753); Michx., Fl. i. 34 (1803); Pursh, Fl. i. 58 (1814); Ell. Sk. i. 92, t. 4, fig. 1 (1821)—uncharacteristic; Big., Fl. Bost. ed. 2, 24 (1824); Torr., Fl. 66 (1824), Ann. Lyc. Nat. Hist, N. Y. iii. 338 (1836), and Fl. N. Y. ii. 358 (1843); Gray, Man. 529 (1848); Britton & Brown, Ill. Fl. i. 273, fig. 643 (1896); Small, Fl. 175 (1903). *Eriophoropsis virginica*, Palla, Bot. Zeit. liv. ab. 1, 150, 151 (1896).—Bogs and meadows, Newfoundland to Ontario and Michigan, south to Georgia. Fruiting, July to September.

Var. ALBUM, Gray. Bristles whitish.—Man. ed. 5, 566 (1867); Britton & Brown, l. c.—A scarcely noteworthy extreme, Quebec and Ontario to Connecticut and New York.

(*To be continued.*)

PLANTS OF ONEIDA COUNTY, NEW YORK, AND VICINITY.—I.

J. V. HABERER, M. D.

IN the latter part of July, 1904, the writer, in company with Mr. L. M. McCormick of New York, spent several days botanizing in the town of Forestport, which forms the northeastern corner of Oneida County. A number of rare and interesting plants were found including one recently described in RHODORA, therefore, the accompanying notes may be of interest to its readers.

The region visited is on the southwestern border of the great Adirondack wilderness, about forty miles north of Utica, and includes White, Otter, Round and Long Lakes, Deer Pond, mountainous woods, extensive beaver meadows or marl marshes, and sandy fields, all within a radius of three miles. A ridge of Archæan rock, extending from the northeast to the southwest, divides the region into two nearly equal portions. On the southeastern slope is White Lake, perfectly clear and transparent, and on the northwestern, the other